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PATENT #3

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Andrew J.J. McCarthy et al.

Serial No.: 09/502,274

Group Art No.: 2735

Filed: February 11, 2000

Examiner: Not Yet Assigned

Title: IMPROVEMENTS IN AND RELATING TO CARGO SECURITY

Assistant Commissioner for Patents  
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TC 2700 MAIL ROOMTRANSMITTAL OF PRIORITY DOCUMENTS UNDER 37 C.F.R. § 1.55(a)

Sir:

Enclosed herewith are two certified copies of priority documents to be entered in the above-identified patent application. The applications from which priority is claimed include:

UK Patent Application No. 9910754.2, filed 05/11/99

UK Patent Application No. 9921658.2, filed 09/14/99

Applicants believe no fee is due with this submission. However, in the event a fee is due, please charge any required fees to Deposit Account No. 07-1509. Applicant respectfully requests that the Office indicate receipt of the priority documents by returning the enclosed post card.

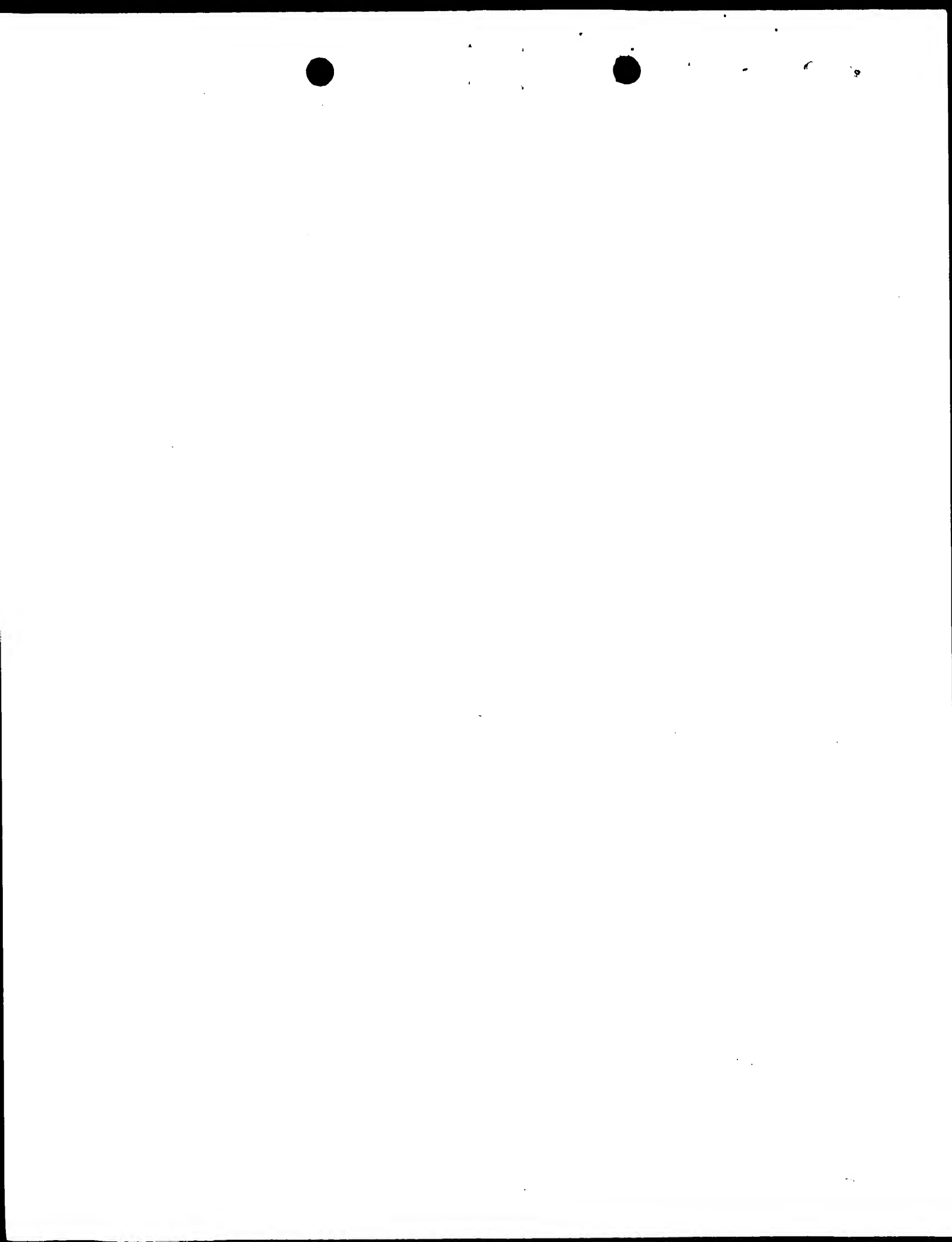
Respectfully submitted,

William K. Baxter

Reg. No.: 41,606

Attorneys of Record for the Applicants  
GODFREY & KAHN, S.C.  
780 North Water Street  
Milwaukee, WI 53202  
(414) 273-3500

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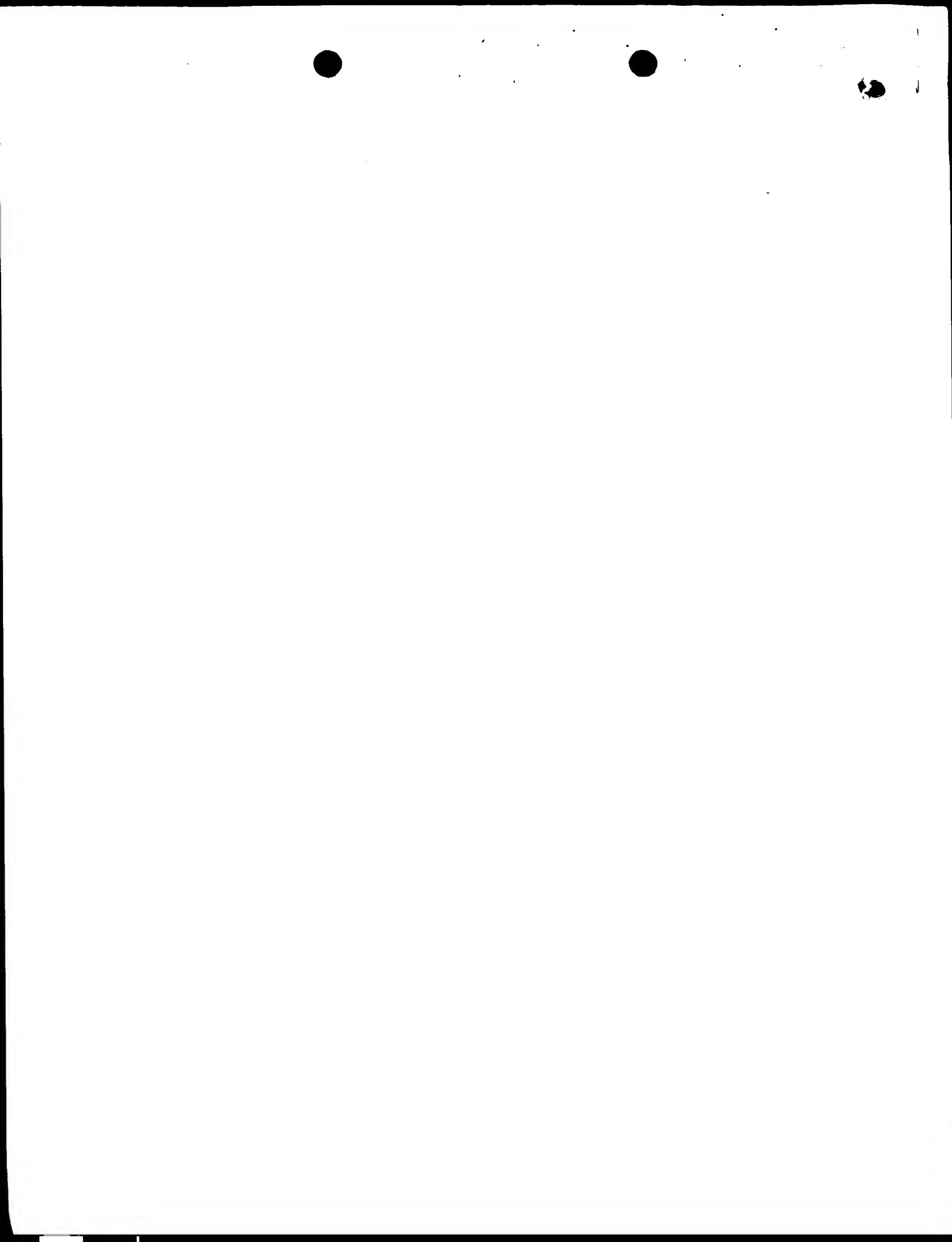
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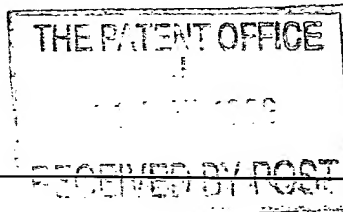
Signed *Andrew Gersey*  
Dated 10 February 2000



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The Patent Office

Cardiff Road  
Newport  
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1. Your reference AHT0022

2. Patent application number  
(The Patent Office will fill in this part) **9910754.2**

3. Full name, address and postcode of the or of each applicant (underline all surnames)  
  
Andrew Joseph John McCARTHY and Charles Peter GATES  
Gorse Dene, Rissington Road  
Bourton-on-the-Water  
Gloucestershire  
GL54 2DX

Patents ADP number (if you know it)

7657877001

If the applicant is a corporate body, give the country/state of its incorporation England

4. Title of the invention CARGO SECURITY

5. Name of your agent (if you have one) Barker Brettell  
  
"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)  
  
138 Hagley Road  
Edgbaston  
Birmingham  
B16 9PW

Patents ADP number (if you know it) 7442494002

6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and (if you know it) the or each application number	Country	Priority application number (if you know it)	Date of Filing (day/month/year)
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7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application	Number of earlier application	Date of filing (day/month/year)
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8. Is a statement of inventorship and of right to grant of a patent required in support of this request (Answer 'Yes' if:  
a) any applicant named in part 3 is not an inventor, or  
b) there is an inventor who is not named as an applicant, or  
c) any named applicant is a corporate body.  
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Statement of inventorship and right to grant of a patent (*Patents Form 7/77*) -

Request for preliminary examination -  
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Any other documents -  
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11. I/We request the grant of a patent on the basis of this application.

Signature

*Barker Brettell*

Date

**Barker Brettell**

10.05.1999

12. Name and daytime telephone number of person to contact in the United Kingdom

Anthony Tebbit

Tel: 0121 456 1364

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## CARGO SECURITY

This invention relates to cargo security, and it has particular, but not exclusive, reference to the security of airline cargo, for example the luggage of passengers.

5 There is an ever increasing awareness of security problems associated with luggage and other cargo items which are to be carried by an aircraft or indeed any other vehicle such as ship, train, or land vehicle particularly where international travel is concerned. There is a problem associated with theft from luggage while it is in the care of the transport agency, (air line, shipping line, railway authority etc.) but particular  
10 problems relate to the carrying of explosive devices onto aircraft or other vehicles and the smuggling of illicit drugs. The problem will be discussed in the particular context of air travel where it is perhaps most serious, but it will be appreciated that analogous problems arise in many other fields.

15 Because of the possibilities of terrorist activity it is common practice, and perhaps universal, for an airline passenger to be asked, when checking in for a particular flight, whether that passenger packed his luggage himself and whether he has left it unattended since. Now while it is true that most people do indeed pack their own luggage, it is by no means  
20 uncommon for the luggage to be left unattended. For example it is usual practice for an hotel to require guests to check out before midday on the day they are leaving, so morning packing is the general rule. This leaves the departing guest with the problem of what to do with his luggage between checking out and departing for the airport. If the guest has an  
25 evening flight to catch, he may make use of a common facility offered by many hotels and leave his luggage in an allegedly secure room during the

afternoon. The traveller may well board a coach for the airport before his luggage has been stowed in the coach's luggage compartment. In either case, the traveller may be reluctant to admit leaving his luggage unattended despite the fact that there has been an opportunity, however brief, to place some unlawful material in his luggage. The consequence of such an admission would be that the passenger would have to open and check his luggage at the check-in counter causing delays to other passengers. It is likely that a combination of laziness and lack of forethought would prevent such an examination prior to arrival at the check-in counter.

The prudent traveller will secure his luggage with a lock of some kind, perhaps a padlock which is the usual method of securing a light-weight zipped case such as is commonly used when flying. However padlocks used for securing luggage are overwhelmingly of one of two designs: one is a small brass padlock and the other a small chromium plated padlock. It would be very easy to cut away such a lock with an ordinary pair of pliers, insert a package of unlawful material, and replace the lock with another one of identical appearance. The disturbance to the luggage would be undetectable until the passenger tried to open it, and he might well not do so before flying. Again, a knowledge of human nature suggests that the passenger would be reluctant to admit the possibility that his luggage had been tampered with.

Again, it is common practice if an arriving international traveller is stopped at an airport customs inspection post for the Customs Officer to ask the traveller whether a piece of luggage belongs to him, whether he packed it himself and whether he has left it unattended. Many people seem to answer "no" to the last question despite the fact that they have had no control over the luggage since it was checked in before the flight,



and that it has certainly been handled by others at two different airports.

It is an object of this invention to address the problems outlined above, and in particular, it is an object of this invention to provide a cargo closure for identifying and securely closing cargo.

- 5 According to the present invention, there is provided a cargo closure comprising a permanently closable tie attached to a data carrier.

The expression "permanently closable tie" is used herein to denote a tie which may be closed, but not thereafter opened without destroying the tie. Embodiments of such ties are widely available as cables ties, for securing  
10 together bundles of electrical wiring.

While it has particular reference to tags for securing the hold luggage of airline passengers, tags in accordance with the invention may be used for other purposes, such as for identifying cabin luggage and indeed as identification tags and/or closure seals for any other article.

- 15 The invention includes a travel pack comprising a travel ticket and at least one such cargo closure.

Since the tie cannot be opened without destroying it, its presence or absence provides a ready indication of whether there has been any attempt to tamper with the cargo or luggage. Such a cargo closure is inexpensive  
20 to manufacture and it may be made in a wide variety of designs and colours. This variety militates against the unauthorised replacement of one such closure with another identical one.

The data carrier may be a separate tag through which the tie is threaded, but such tag and tie are preferably fixed to one another. In some

preferred embodiments of the invention, a tag for carrying data is integrally moulded with the tie. The data carrier may be the tag itself, and/or it may be a label adhered to the tag.

5 In preferred embodiments of the invention, the tag is foldable and means is provided for securing it in closed condition to prevent casual inspection of data carried on the inner folded faces of the tag.

Advantageously, the data carrier carries, or includes a space for the insertion of, one or more of the following data:

- name and address of the owner or consignee of the article,
- 10 an identification reference location indicator (which may be alpha-numeric) which gives an indication of the location, in a computer or other data storage facility, of data pertaining to cargo to which that data carrier is, or is intended to be, affixed,
- machine readable data for example in the form of one or more bar codes
- 15 relating to details of the departure of any conveyance on which the cargo, with or without its owner, is booked to travel,
- an operator identifier, for example the logo of an air or shipping line, or of a tour operator or travel agent.

The invention includes a cargo security system comprising a computer

20 having a memory adapted to store data relating to an item of cargo and a cargo closure comprising a permanently closable tie attached to a data carrier bearing a reference location indicator (which may be alpha-numeric) which gives an indication of the location, in said computer memory, of data pertaining to the item of cargo to which that data carrier

25 is, or is intended to be, affixed.

A preferred embodiment of the invention will now be described by way of example only with reference to the accompanying drawings in which:

Figures 1 and 2 are respectively front and rear views of a cargo closure in accordance with this invention; and

5 Figure 3 shows the closure folded closed.

In the drawings, a cargo closure 1 comprises a permanently closable tie 2 attached to a data carrier 3. The tie 2 and data carrier 3 are suitably formed as an integral moulding of a polymeric material. The polymeric material used is suitably a nylon™, though other materials could be used.

10 The tie 2 comprises a strap 20 and a base member 21. The rear face of the strap 20 carries barbs 22 which engage with a flexible pawl member 23 located within a hole 24 through the base member 21 through which a free end of the strap 20 may be passed and tightened. The strap may be passed through convenient parts of the cargo item so that it is secured  
15 closed.

The data carrier 3 bears on its front face space 31 for the insertion of a passenger's or consignee's name and address. This space may be constituted by a textured surface of the data carrier which is adapted to receive writing e.g. from a ball-point pen, or it may be an adhesive label  
20 of paper or other suitable material. Such an adhesive label could be supplied separately typing or printing of the address details, or the address details could be pre-printed onto the label, for example by a travel ticket supplier.

The data carrying tag comprises a hinge or fold line 32 and pop-studs 33  
25 and co-operating holes 34 by which the tag may be folded and held closed

in order to conceal such name and address details from casual observers. This is intended to alleviate a common fear of holidaymakers that displaying one's name and address on luggage labels is in effect an advertisement to potential thieves that one's home will be unoccupied for  
5 some days or weeks. Such fold line is shown horizontal. Depending on the shape of the data carrier, it may be more appropriate to have the fold line vertical.

The rear face 35 of the data carrier suitably carries an alpha-numeric string such as indicated at 36. This may be a string which is unique to a  
10 particular cargo item, or a plurality of different cargo closures may be produced with a same alpha-numeric string 36 which is unique to a particular consignment or to a traveller or group of travellers. For example a family or other group of travellers who book a flight at the same time could be allocated a common alpha-numeric string 36. Such an  
15 alpha-numeric string could be used as a reference location indicator identifying the location in a data storage facility of further data relating to the cargo item or items. An alpha-numeric string such as 36 could be moulded into the cargo closure during its manufacture.

The rear face 35 of the data carrier also suitably carries a machine  
20 readable data string such as a bar code 37. This may again be a string which is unique to a particular cargo item, or a plurality of different cargo closures may be produced with a same bar code 37 which is unique to a particular consignment or to a traveller or group of travellers, and again such a bar code could be used as a reference location indicator  
25 identifying the location in a data storage facility of further data relating to the cargo item or items. Alternatively, such bar code could be an encoding of data relating to a particular flight or other departure on which the cargo item was booked. Such bar code could be present on the data

carrier when supplied to the customer, or it could be applied as an adhesive label, for example at a passenger check-in position.

Such an alpha-numeric string 36 or bar code 37, or both, could be duplicated on the rear face of the data carrier so that it or they were  
5 readable from both sides of the closure when its data carrier is in the closed condition as shown in Fig. 3

The data carrier may also carry a logo 38 of some trading organisation, for example an airline or a travel tour operator, in which case it could serve as a gross identifier for travellers luggage. Such a logo 38 could  
10 alternatively be an advertising slogan or Trade Mark which is associated with an advertising campaign rather than specifically with the journey being undertaken.

It is envisaged that such cargo closures could be supplied to airline passengers and other travellers in packs containing a number related to the  
15 number of people travelling together, there being sufficient for outward and return journeys together with a few spare closures in case of last minute re-opening of luggage, and to allow for the purchase of additional luggage items.

The use of cargo closures in accordance with the invention, in particular,  
20 on air travellers luggage, provides a simple and effective means of discouraging unauthorised tampering with items of luggage at any time between original closure of the luggage and reclaiming of the luggage after travel.

Given the large number of possible colours in which a cargo closure could  
25 be moulded from polymeric material, the large number of logos which

could be incorporated, and the large number of alpha-numeric sequences which could be applied, it is envisaged that breaking and replacement of the closure with an apparently identical closure would present the criminal with insuperable difficulties. If the closure were not replaced, its absence  
5 would be immediately apparent, and the fact that the luggage or other cargo item had been tampered with could be reported immediately to an appropriate authority.

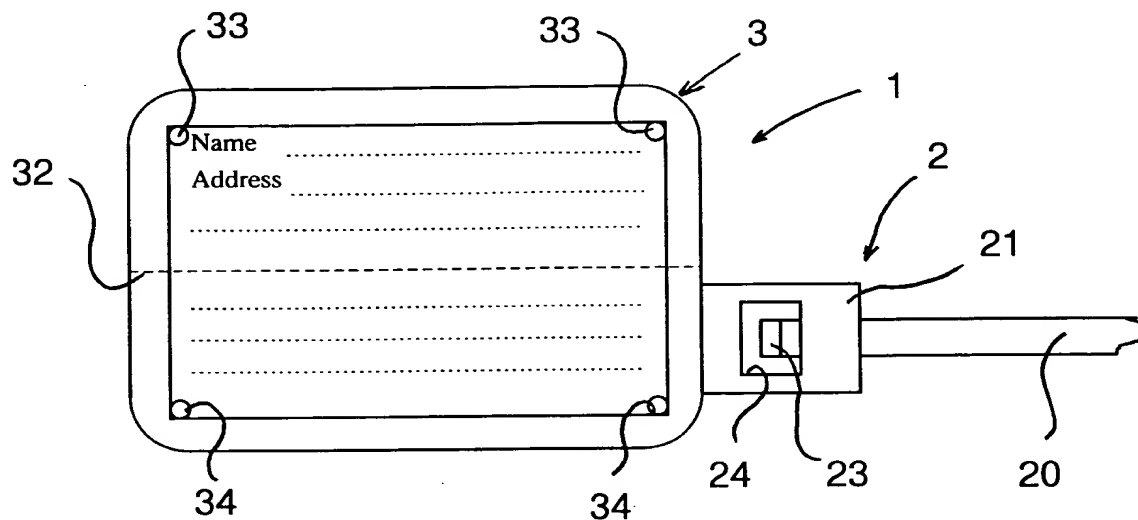


Fig. 1

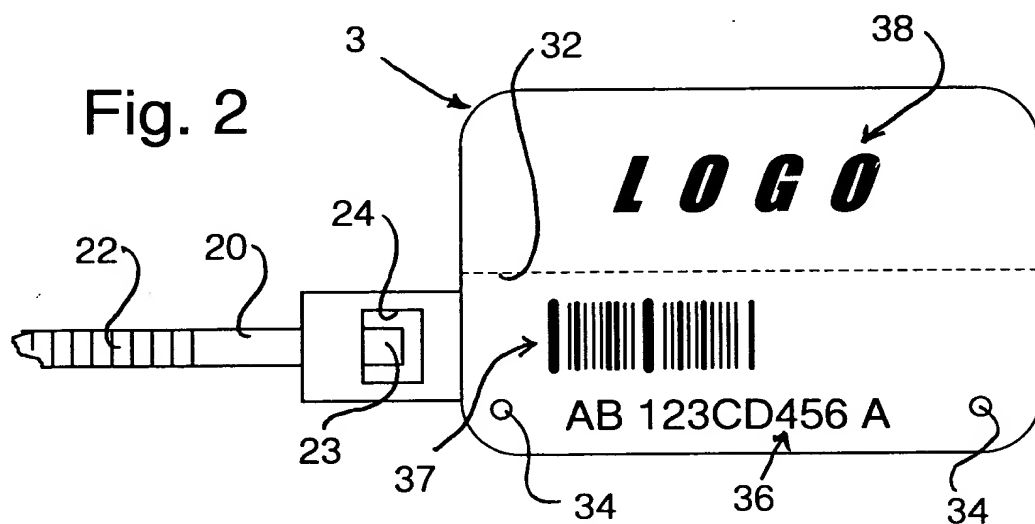


Fig. 2

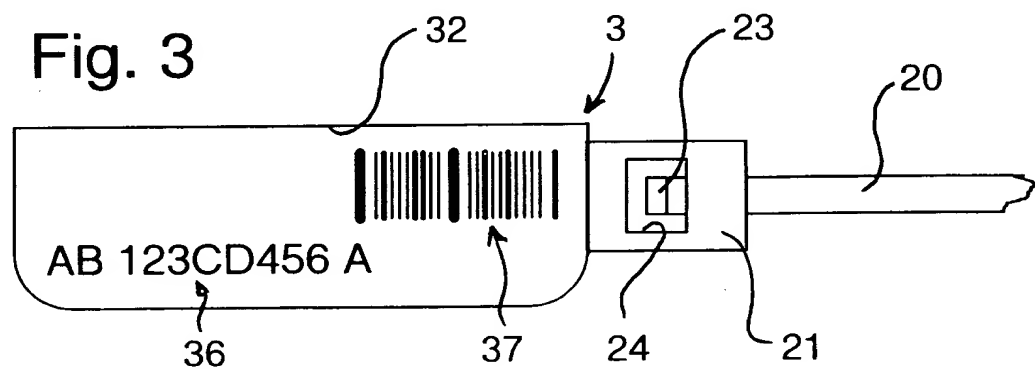


Fig. 3

